



Immobilization of Concanavalin A (Con A) in Xyloglucan Film for Biotechnological Application

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Xyloglucan is a polysaccharide extracted from plant seeds, including *Hymenaea courbaril* var. *courbaril*, popularly known as jatobá. This carbohydrate has the ability to form matrices for the immobilization of bioactive molecules. Lectins are proteins that, once incorporated in polysaccharide films, can preserve their biological activities. Concanavalin A (Con A) is a lectin that has several biological applications such as antitumor, mitogenic and activity healing inductor. This study aimed to immobilize Con A in a Xyloglucan film and assess its activity. The filmogenic solution was prepared with xyloglucan (0.5% w/v) and glycerol (0.3% v/v), pH 6 and magnetic stirring at 25°C for 5h. Subsequently, 500µg/mL of Con A or Con A labeled with Fluorescein isothiocyanate (Con A-FITC) was incorporated and the conditions were maintained for 30 min. The filmogenic solution was placed on petri dishes and dried at 37°C for 24h in order to form the film. The lectin homogeneity was performed by fluorescence microscopy in the films with Con A-FITC. The film toxicity was obtained by hemolytic activity. The delivery assays of Con A incorporated in the film was performed by protein and hemagglutinating activity (HA) measurement, during 96h. The fluorescence microscopy demonstrated that Con A-FITC is well distributed on the xyloglucan film. The film showed no toxicity. Con A delivery increased over the time, obtaining the higher protein value (435mg/mL) with 72h, with 100% retention of the initial HA. The results suggest that the Con A incorporated in the xyloglucan film presents a promising application as topic dressing.

Word Keys: Concanavalina A, Xyloglucan, Films.

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